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STARTIFIED AND FACETED SHAPES ON PANORAMAS
OBTAINED FROM THE STATION
LUNA-9

by
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Tom 170, No. 3, p.160
One Plate, 3 Figs.
Izdatl'stvo "NAUKA", 1966

by V. M. Vakhnin &
G. I. Zmiyevskaya

SUMMARY

This note gives some additional comments regarding the structures observed on the panoramas published in the monograph of April 1966 by the USSR Academy of Sciences*. It is accompanied by four figures representing fragments of the panoramas.

*
* * *

As pointed out in the memoir*, complex structures of characteristic and recurrent shapes are observed on the panoramas. Indicated in particular is the presence of formations that may be characterized as "small, but somehow plane areas ("facets"), agglomerated into voluminous structures or complex polyhedrons.

There are observed on the photographs, at numerous spots, rectilinear boundaries between light and shadow, spreading in various directions, sometimes perpendicularly to the television raster. These lines cross several (sometimes up to ten) lines of the raster. Such rectilinear shadows may reject objects with only straight or plane facets or sides. Thus, by way of purely formal viewing of the images the presence of "faceted" elements is revealed.

Shown in Fig. 1 is the part of panorama III with marked areas containing the indicated shapes. The graphic interpretation of fragment 1 of that panorama is given in Fig. 2.

According to the interpretation offered, the region of Fig. 2 contains at least several "stratified structures", bounded by two parallel, nearly vertical facets of significant extension. The ends of these "layers" lack in some cases a regular shape, while in others they form a characteristic saw-like shape, whereupon in this case the angle between facets at summits and hollows of "dents" is near 120° . The characteristic thickness of layers is 0.8 - 1.5 cm; the length of visible segments of layers is less defined, but may be estimated at 20 - 40 cm.

* FIRST PANORAMAS OF THE LUNAR SURFACE (Pervyye panoramy lunnoy poverkhnosti). Russ ed. "NAUKA", 1966. (ST - LPS - 10 503 / Sp)

Fragment 2, with a prominent flattened stone is shown in Fig. 3 in a magnified form, together with its interpretation. Here two "dents" are clearly outlined, just as are two "craterlets", apparently created by impacts of incident particles. A more extended layer is also considered in the same figure; it is characterized by a saw-like upper edge. Several other thinner layers with irregularly shaped ends are shown also.

Such a detailed viewing of panoramas exposes a large number of faceted and stratified shapes. However, a number of them are not so clearly apparent as those indicated above. The prevalence of faceted and stratified structures and the frequent recurrence of characteristic angles, near 90 and 120°, provide the possibility to assume a relationship between these shapes and the mineral composition of the lunar surface.

**** THE END ****

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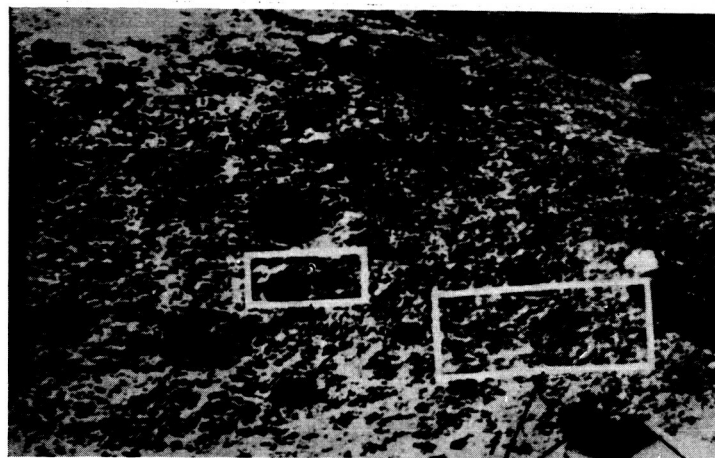


Fig.1. Portion of the lunar panorama III (sector 120-165)

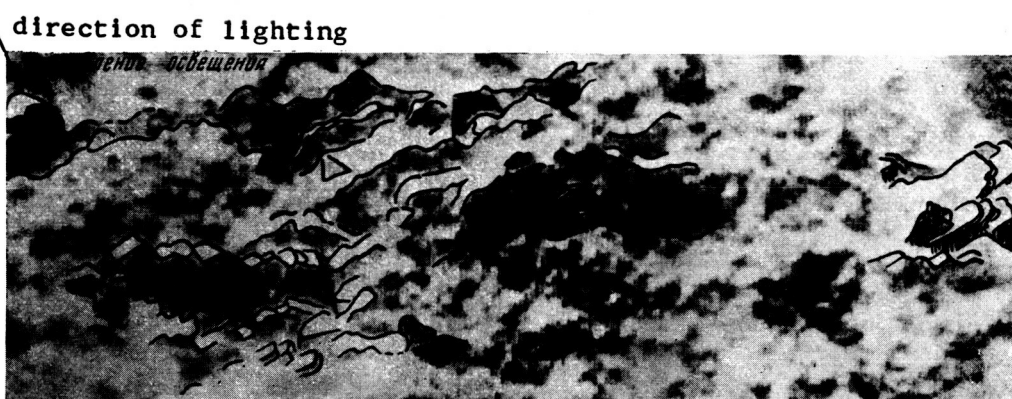


Fig.2 Graphic interpretation of fragment 1 (Fig.1). The range from the panoraming center is 1.5 m, planar dimension 20 by 50 cm



direction of lighting



Fig.3. Fragment 2 (Fig.1 and its graphic interpretation. The range from the panning center is 1.4 m and the dimension in plane is 6 by 20 cm